

=> file hcaplus

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FILE COVERS 1967 - 19 Sep 2000 VOL 133 ISS 13
 FILE LAST UPDATED: 18 Sep 2000 (20000918/ED)

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=> d que 131

L17	23 SEA FILE=HCAPLUS ABB=ON	BORIC ACID(S)MEASUR?(4A)CONC?
L18	32 SEA FILE=HCAPLUS ABB=ON	BORIC ACID(S)DETERM?(4A)CONC?
L19	51 SEA FILE=HCAPLUS ABB=ON	L17 OR L18
L20	259 SEA FILE=HCAPLUS ABB=ON	BORIC ACID(L)ANT/RL
L21	2 SEA FILE=REGISTRY ABB=ON	"BORIC ACID"/CN
L22	17360 SEA FILE=HCAPLUS ABB=ON	L21
L23	57 SEA FILE=HCAPLUS ABB=ON	(L22 OR H3BO3) (S) (MEASUR? OR DETERM?) (4A)CONC?
L24	267 SEA FILE=HCAPLUS ABB=ON	(L22 OR H3BO3) (L)ANT/RL
L25	30 SEA FILE=HCAPLUS ABB=ON	(L19 OR L23) AND (L20 OR L24)
L26	0 SEA FILE=HCAPLUS ABB=ON	(L19 OR L23) AND ?CARBOXYLIC
L27	0 SEA FILE=HCAPLUS ABB=ON	(L19 OR L23) AND ?CARBOXYL? ACID#
L28	0 SEA FILE=HCAPLUS ABB=ON	(L19 OR L23) AND LUBRIC?
L29	16 SEA FILE=HCAPLUS ABB=ON	(L19 OR L23) AND COOLANT?
L30	1 SEA FILE=HCAPLUS ABB=ON	(L19 OR L23) AND ?CARBOXYL?
L31	<u>37 SEA FILE=HCAPLUS ABB=ON</u>	(L25 OR L26 OR L27 OR L28 OR L29 OR L30)

=> file wpids

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=> d que 143

L32	40 SEA FILE=WPIDS ABB=ON	(BORIC ACID OR H ₃ BO ₃) (S) (DETERM? OR MEASUR?) (3A) CONC?
L34	3 SEA FILE=WPIDS ABB=ON	L32 AND (LUBRI? OR COOLANT?)
L36	163 SEA FILE=WPIDS ABB=ON	BORIC/TI AND CONC?/TI
L37	17 SEA FILE=WPIDS ABB=ON	L32 AND L36
L39	0 SEA FILE=WPIDS ABB=ON	L37 AND (CAR OR AUTOMOB?)
L40	0 SEA FILE=WPIDS ABB=ON	L37 AND VEHIC?
L41	3 SEA FILE=WPIDS ABB=ON	L34 OR L39 OR L40
L42	1 SEA FILE=WPIDS ABB=ON	L32 AND ?CARBOXYL?
L43	<u>4 SEA FILE=WPIDS ABB=ON</u>	L41 OR L42

=> file compendex

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FILE LAST UPDATED: 28 AUG 2000 <20000828/UP>
FILE COVERS 1970 TO DATE.

=> d que 147

L44	16 SEA FILE=COMPENDEX ABB=ON	(BORIC ACID OR H ₃ BO ₃) (S) (DETERM? OR MEASUR?) (3A) CONC?
L45	2 SEA FILE=COMPENDEX ABB=ON	L44 AND (LUBRI? OR COOLANT?)
L46	5 SEA FILE=COMPENDEX ABB=ON	L44 AND MEASUREMENTS+NT/CT
L47	<u>6 SEA FILE=COMPENDEX ABB=ON</u>	L45 OR L46

=> file jicst

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FILE COVERS 1985 TO 19 SEP 2000 (20000919/ED)

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=> d que 152

L48	9 SEA FILE=JICST-EPLUS ABB=ON	(BORIC ACID OR H ₃ BO ₃) (S) (DETERM? OR MEASUR?) (3A) CONC?
L49	9821 SEA FILE=JICST-EPLUS ABB=ON	CONCENTRATION DETERMINATION+NT/CT
L50	3 SEA FILE=JICST-EPLUS ABB=ON	L48 AND L49
L51	7 SEA FILE=JICST-EPLUS ABB=ON	L49 AND BORIC ACID+NT/CT
L52	<u>7 SEA FILE=JICST-EPLUS ABB=ON</u>	L50 OR L51

=> file ceaba

FILE 'CEABA' ENTERED AT 12:24:48 ON 19 SEP 2000
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FILE LAST UPDATED: 25 NOV 1999 <19991125/UP>
FILE COVERS 1971 TO DATE.

>>> The databases CEABA and VTB are presently merged to one common database in chemical engineering and biotechnology. The merged file called CEABA-VTB is scheduled for release in September 2000. Updating will continue with the merged file. <<<

=> d que 153

L53 2 SEA FILE=CEABA ABB=ON (BORIC ACID OR H3BO3) (S) (DETERM? OR
MEASUR?) (3A) CONC?

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FILE COVERS 1964 TO DATE.

=> d que 157

L54 12 SEA FILE=NTIS ABB=ON (BORIC ACID OR H3BO3) (S) (DETERM? OR
MEASUR?) (3A) CONC?
L56 4101 SEA FILE=NTIS ABB=ON QUANTITATIVE CHEMICAL ANALYSIS+NT/CT
L57 2 SEA FILE=NTIS ABB=ON L54 AND L56

=> dup rem 131 143 147 152 153 157

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PROCESSING COMPLETED FOR L43

PROCESSING COMPLETED FOR L47

PROCESSING COMPLETED FOR L52

PROCESSING COMPLETED FOR L53

PROCESSING COMPLETED FOR L57

L58 57 DUP REM L31 L43 L47 L52 L53 L57 (1 DUPLICATE REMOVED)

=> d 158 all 1-57

L58 ANSWER 1 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 2000:577123 HCAPLUS
 DN 133:184477
 TI Contribution to the balancing and regulation of ⁷Li-budget in pressurized water reactors
 AU Bolz, M.; Enkler, G.
 CS Germany
 SO Tagungsber. - Jahrestag. Kerntech. (2000) 447-450
 CODEN: TJKDEX; ISSN: 0720-9207
 PB INFORUM Verlags- und Verwaltungsgesellschaft
 DT Journal
 LA German
 CC 71-4 (Nuclear Technology)
 AB The thermal performance of PWRs is detd. by the concn. on ¹⁰B in the primary coolant, and the ability of ¹⁰B to absorb thermal neutrons under release of .alpha.-particles and ⁷Li. At the begin of the cycle the reactivity of the nuclear fuel was high and a high ¹⁰B concn. was recommended to catch the excess neutrons, while with increasing burnup the demand on ¹⁰B decreased down to zero. The ⁷Li budget of a PWR was balanced for the first time, and conventional and novel procedures to influence the concn. of ⁷LiOH are reported, as well as their potential economic benefits.
 ST membrane electrolysis lithium removal coolant PWR; boric acid removal membrane electrolysis PWR coolant
 IT Cooling water
 Mass balance
 (balancing and regulation of ⁷Li-budget in pressurized water reactors)
 IT Pressurized water nuclear reactors
 (cooling systems; balancing and regulation of ⁷Li-budget in pressurized water reactors)
 IT Wastewater treatment
 (electrochem., membrane; balancing and regulation of ⁷Li-budget in pressurized water reactors)
 IT Water purification
 (electrolysis, membrane; balancing and regulation of ⁷Li-budget in pressurized water reactors)
 IT Wastewater treatment
 (membrane sepn., electrochem.; balancing and regulation of ⁷Li-budget in pressurized water reactors)
 IT Nuclear reactor cooling systems
 (pressurized-water; balancing and regulation of ⁷Li-budget in pressurized water reactors)
 IT 10043-35-3, Boric acid, processes 13982-05-3, Lithium 7, processes
 RL: PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process)
 (balancing and regulation of ⁷Li-budget in pressurized water reactors)

L58 ANSWER 2 OF 57 COMPENDEX COPYRIGHT 2000 EI
 AN 1999(32):2649 COMPENDEX
 TI Wet chemical method for the determination of thickness of SiO₂ layers below the nanometer level.
 AU De Smedt, F. (Katholieke Universiteit Leuven, Leuven, Belgium); Stevens, G.; De Gendt, S.; Cornelissen, I.; Arnauts, S.; Meuris, M.; Heyns, M.M.; Vinckier, C.
 SO Journal of the Electrochemical Society v 146 n 5 1999.p 1873-1878
 CODEN: JESOAN ISSN: 0013-4651
 PY 1999
 DT Journal
 TC Experimental
 LA English
 AB A wet chemical procedure has been elaborated to measure the thickness of KATHLEEN FULLER EIC 1700 308-4290

thin silicon dioxide layers. The procedure is based on the etching of the SiO₂ layer by HF and the determination of Si concentration in the microgram per liter range in the HF containing etch solutions. Two analytical techniques were optimized for this purpose: a spectrophotometric technique, the so-called molybdenum blue method and inductively coupled plasma mass spectrometry (ICP-MS). In the first method a detection limit of 3.3 μg/L Si could be achieved with a sensitivity of (780 plus or minus 8.7) multiplied by 10 minus 6/(μg/L Si). Interference by HF up to 0.1% v/v (volume/volume %) HF could be eliminated by adding boric acid to the solution. In the second method Si was determined by ICP-MS using the ²⁸Si isotope. The detection limit in bidistilled water was 1.2 μg/L Si with a sensitivity of (5807 plus or minus 98) cps/(μg/L Si). The presence of HF increased the background signal of Si due to the etching of the quartz plasma torch. In 0.005% v/v HF a detection limit of 5.9 μg/L Si could be achieved. For silicon dioxide layers below 1 nm, a reproducibility better than 5% was obtained. (Author abstract) 20 Refs.

CC 712.1 Semiconducting Materials; 712.1.2 Compound Semiconducting Materials; 804.2 Inorganic Components; 943.2 Mechanical Variables Measurements; 802.2 Chemical Reactions; 801 Chemistry

CT *Semiconducting films; Spectrophotometry; Thickness measurement; Etching; Hydrofluoric acid; Boron compounds; Mass spectrometry; Plasma applications; Semiconducting silicon compounds; Silica

ST Molybdenum blue method; Inductively coupled plasmas (ICP); Boric acid
ET O*Si; SiO₂; Si cp; cp; O cp; F*H; HF; H cp; F cp; Si; ²⁸Si; is; Si is

L58 ANSWER 3 OF 57 HCPLUS COPYRIGHT 2000 ACS

AN 1998:240467 HCPLUS

DN 129:33484

TI Continuous measurement of the boron-10 concentration in PWR circuits

AU Nopitsch, K.; Bauer, H.; Schindhelm, F.; Wiening, K. H.; Stemmer, F. J.

CS Germany

SO VGB Tech. Ver. Grosskraftwerksbetr., [Tagungsber.] VGB-TB (1997), VGB-TB 433, VGB-Konferenz "Chemie im Kraftwerk 1997", N2/1-N2/9
CODEN: VTVVDR; ISSN: 0722-3951

DT Report

LA German

CC 71-3 (Nuclear Technology)

Section cross-reference(s): 79

AB In the PWR facility, boric acid is introduced to control the reactivity of the coolant. The boric acid concn. can be varied within wide limits by using the auxiliary system of the reactor. The ¹⁰B neutron physics-effective isotope is contained in amts. up to .apprx.20% in naturally occurring B. In advanced fuel element concepts with a higher level of fissile material enrichment, the monitoring of the ¹⁰B concn. in the coolant conducting lines is relevant with regard to safety. With COMBO (Continuous Measurement of Boron Concn.), there is now a measuring system which permits a continuous measurement of the B concn. in the primary circuit and the adjacent reactor auxiliary system. The advantages and characteristics of the COMBO system are given.

ST boron 10 addn control reactivity PWR; continuous measurement boron concn PWR coolant; boric acid addn coolant system PWR; safety boron 10 addn PWR coolant

IT Pressurized water nuclear reactors

(cooling systems; continuous measurement of the boron-10 concn. in PWR coolant circuits with added boric acid)

IT Nuclear reactor cooling systems

(pressurized-water; continuous measurement of the boron-10 concn. in PWR coolant circuits with added boric acid)

IT 14798-12-0, Boron-10, uses

RL: ANT (Analyte); MOA (Modifier or additive use); PRP (Properties); ANST
KATHLEEN FULLER EIC 1700 308-4290

(Analytical study); USES (Uses)
 (continuous measurement of the boron-10 concn. in PWR circuits)

IT 10043-35-3, Boric acid, uses
 RL: ANT (Analyte); MOA (Modifier or additive use); PRP
 (Properties); ANST (Analytical study); USES (Uses)
 (continuous measurement of the boron-10 concn. in
 PWR circuits with added boric acid)

L58 ANSWER 4 OF 57 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
 AN 1997-505574 [47] WPIDS
 DNN N1997-421061 DNC C1997-161047
 TI Determining lithium content of nuclear reactor primary coolant -
 comprises determining boron concentration and using with conductivity
 measurement to determine lithium concentration.
 DC K05 S03
 IN BRUN, C; LONG, A
 PA (FRAT) FRAMATOME; (FRAT) FRAMATOME SA
 CYC 9
 PI EP 802410 A1 19971022 (199747)* FR 9p G01N033-18
 R: BE CH DE ES GB LI NL SE
 FR 2747784 A1 19971024 (199750) 18p G01N027-06
 ADT EP 802410 A1 EP 1997-400785 19970404; FR 2747784 A1 FR 1996-4805 19960417
 PRAI FR 1996-4805 19960417
 REP 1.Jnl.Ref; FR 2616259; US 4204259
 IC ICM G01N027-06; G01N033-18
 ICS G21C017-022
 AB EP 802410 A UPAB: 19971125
 In a process for measuring lithium concentration in
 nuclear reactor primary cooling water, containing boric
 acid for reactor core reactivity control and lithium hydroxide for
 pH control, by measuring the electrical conductivity of a sample taken
 from the primary circuit, the boron concentration is also
 determined and is used together with the conductivity measurement
 to calculate the lithium concentration.
 USE - Used especially for controlling the lithium concentration in
 the primary circuit coolant of a PWR in accordance with the
 varying boron concentration to achieve a constant pH and thus avoid
 formation of radioactive corrosion products.
 ADVANTAGE - The process permits precise and reliable measurement of
 the instantaneous lithium concentration in the primary coolant
 irrespective of the reactor operating mode (e.g. after a rapid increase or
 decrease in reactor power).
 Dwg.1/1
 FS CPI EPI
 FA AB; GI
 MC CPI: K05-B06B
 EPI: S03-E14B

L58 ANSWER 5 OF 57 JICST-EPlus COPYRIGHT 2000 JST
 AN 970954138 JICST-EPlus
 TI Development of Automatic High-concentration Boron Measurement Technique.
 AU MAEDA TOSHIHIKO; HONDA SHUICHI; ITO AYUMU
 CS Kyushu Electr. Power Co., Inc.
 SO Kyushu Denryoku K.K. Sogo Kenkyujo Kenkyu Kiho, (1997) vol. 78, pp.
 101-110. Journal Code: S0678A (Fig. 13, Tbl. 3)
 ISSN: 0287-9263
 CY Japan
 DT Journal; Article
 LA Japanese
 STA New
 AB IN the pressurized type nuclear power plant, it controls the nuclear
 reaction by adding boron in the primary coolant, and reuses boron by
 concentrating by the boric acid recovery system. Since
 the analysis accuracy of this boron concentration confirmation by manual

analysis is not good, it developed the automatic measurement technology of boron carrying out automatic measurement. This paper explained the followings : selection of the detection method ; measurement principle of the density hydrometer, relation of the **boric acid** water density and boron concentration ; influence of the coexistence substance ; and the demonstration experiment by the system water. As the features of this technology, it can measure the **boric acid** water of high **concentration** directly, and boron measurement of not only the high-concentration region but also the low-concentration region is possible. It can simultaneously expect the labor saving of operation control of the acid recovery system and the efficiency improvement of the chemical analysis services.

CC MD04040P (621.039.534)
 CT **concentration determination**; boron; cooling water; PWR type reactor; **boric acid**; recovery of useful material; chemical analysis; reactor coolant; reactor cooling system; automatic measurement
 BT measurement; 3B group element; element; second row element; service water; water; light water reactor; thermal neutron reactor; nuclear reactor; boron oxyacid; oxyacid; oxygen compound; oxygen group element compound; boron compound; 3B group element compound; resource recovery; recovery; analysis(separation); analysis; reactor material; material; reactor component

L58 ANSWER 6 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1997:55242 HCAPLUS
 DN 126:110066
 TI Nondestructive burnup determination of WWER-440 fuel elements. Experiences with the measuring apparatus FAMOS III KOLA
 AU Simon, C. G.; Pytkin, J. N.; Korenkow, A. G.; Woronkow, A. A.
 CS NUKEM GmbH, Alzenau, 63755, Germany
 SO Tagungsber. - Jahrestag. Kerntech. (1996) 446-449
 CODEN: TJKEDX; ISSN: 0720-9207
 PB INFORUM Verlags- und Verwaltungsgesellschaft
 DT Journal
 LA German
 CC 71-5 (Nuclear Technology)
 AB For use in Russian nuclear power plants, NUKEM has developed a special measuring app. FAMOS III (Fuel Assembly Monitoring System), with which a nondestructive detn. of the burnup of WWER-440 fuel elements can be carried out. The use of FAMOS has become necessary on the basis of criticality safety. The method uses so-called passive neutron measurements to det. burnup, involving **boric acid concn. measurements**. In an example, a comparison of the measured with the calcd. burnup is demonstrated.
 ST reactor fuel burnup passive neutron measurement; WWR fuel burnup detn measuring app; **boric acid concn. measurement** fuel burnup; safety nondestructive burnup detn WWR fuel
 IT Fuel assemblies
 (WWR; nondestructive burnup detn. of WWER-440 fuel assemblies and experiences with measuring app. FAMOS III KOLA)
 IT Water-cooled water-moderated nuclear reactors
 (fuel assemblies; nondestructive burnup detn. of WWER-440 fuel assemblies and experiences with measuring app. FAMOS III KOLA)
 IT Nuclear fuels
 (nondestructive burnup detn. of WWER-440 fuel elements and experiences with measuring app. FAMOS III KOLA)
 IT 10043-35-3, **Boric acid (H₃BO₃)**, uses
 RL: ANT (Analyte); PRP (Properties); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
 (nondestructive burnup detn. of WWER-440 fuel elements by socalled passive neutron measurement involving detn. of **boric acid concns.**)

L58 ANSWER 7 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1995:857300 HCAPLUS
 DN 123:357814
 TI Continuous determination of HCOO- and H₃BO₃
 concentration in Cr(III) plating bath
 AU Zhang, Pijian; Wang, Xiaoling; Wang, Fengge; Zou, Lizhuang
 CS Department of Chemistry, Yantai Normal College, Yantai, 264025, Peop. Rep.
 China
 SO Cailiao Baohu (1995), 28(7), 23-4
 CODEN: CAIBE3; ISSN: 1001-1560
 DT Journal
 LA Chinese
 CC 79-6 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 80
 AB HCOO- and H₃BO₃ were detd. continuously by titrn. The interferences by Cr³⁺ and NH₄⁺ were eliminated by removal of the ions with boiling alk. solns. The end points were detected by the 2nd differential curves.
 ST formate boric acid continuous detn titrn; chromium plating bath analysis
 formate borate
 IT Electrodeposition and Electroplating
 (continuous detn. of HCOO- and H₃BO₃ concn
 . in Cr(III) plating bath)
 IT 7440-47-3, Chromium, analysis
 RL: AMX (Analytical matrix); NUU (Nonbiological use, unclassified); ANST (Analytical study); USES (Uses)
 (continuous detn. of HCOO- and H₃BO₃ concn
 . in Cr(III) plating bath)
 IT 71-47-6, Formate, analysis 10043-35-3, Boric acid, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (continuous detn. of HCOO- and H₃BO₃ concn
 . in Cr(III) plating bath)

L58 ANSWER 8 OF 57 CEABA COPYRIGHT 2000 DECHEMA
 AN 1995:39815 CEABA
 TI Online process monitoring of an automated galvanic plating plant via HPLC
 HPLC als analytisches Instrument zur Badueberwachung eines galvanischen
 Nickeldispersionsselektrolyten
 AU Froehler, M.; Mielsch, G.; Mrotzek, G. (BMW, Muenchen, D)
 SO GIT, Fachz. Lab. (1994) 38(4), p.298-303, 8f,111
 CODEN: GITEAR ISSN: 0016-3538
 DT Journal
 LA German
 AB The galvanic solution for covering cylinder barrels of aluminium crankcases with a nickel-siliconcarbide-coating contains NiSO₄, H₃BO₃, SiC, saccharine (hardening agent) and decomposition products of saccharine (o-sulfobenzoic acid, benzamide, o-toluene sulfonamide etc.) which affect the galvanic process. The quantitative analysis of saccharine and its metabolites is carried out by HPLC. The process is monitored by an on-line analysis determining the concentrations of NiSO₄ and impurities (Al, Zn etc) and an off-line analysis of SiC, H₃BO₃, saccharine and the decomposition products. With an automated galvanic plant like this, an adjustment of the solutions composition or a regeneration is possible. The saccharine decomposition products and all the other organic compounds are eliminated by an catalytically induced oxygenation process.
 (H.Schrod)
 CC 5823 Electrochemical processes
 226 Analysis and data processing
 6434 Chromatographic methods
 CT HIGH-PERFORMANCE-LIQUID CHROMATOGRAPHY; ONLINE MONITORING; PLATING;
 PROCESS MONITORING
 ST ONLINE

L58 ANSWER 9 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1994:519684 HCAPLUS
 DN 121:119684
 TI Experimental and analytical studies of boric acid concentrations in a WWER-440 reactor during the long-term cooling period of loss-of-coolant accidents
 AU Tuunanen, J.; Tuomisto, H.; Raussi, P.
 CS Technical Research Centre of Finland (VTT), Nuclear Engineering Laboratory (YDI), PO Box 20, Lappeenranta, 53851, Finland
 SO Nucl. Eng. Des. (1994), 148(2-3), 217-31
 CODEN: NEDEAU; ISSN: 0029-5493
 DT Journal
 LA English
 CC 71-3 (Nuclear Technology)
 AB Concg. and mixing of H₃BO₃ during the long-term cooling period of loss-of-coolant accidents (LOCAs) in the Loviisa WWER-440 reactors was studied with the REWET-II and VEERA facilities. To get more detailed information on H₃BO₃ mass transfer, a specific facility was built to simulate B mixing in the lower plenum of the reactor. The expts. with the VEERA facility showed that in the WWER-440 reactor fuel bundles the mixing is complete due to boiling and U-tube oscillations and, hence, the concn. distribution of H₃BO₃ in the bundles is uniform. The U-tube oscillations are an important mechanism in transferring concd. H₃BO₃ from the core to the lower plenum. The expts. demonstrated that crystn. of H₃BO₃ in the reactor core simulator is possible, if a stable long-term cooling situation with water boiling in the core continues long enough. In the expts., the crystn. of H₃BO₃ in the core simulator led to a flow blockage of the fuel rod bundle and overheating of the rod simulators when the flow through the core ceased. Exptl. results were used to develop a computational model for calcns. of H₃BO₃ concns. in the reactor during LOCAs. The development work was supported with a series of RELAP5/MOD3 small-break LOCA analyses. The results of the RELAP5/MOD3 calcns. were used to det. the boundary conditions under which concn. of the H₃BO₃ might occur. Reactor anal. showed that the crystn. of H₃BO₃ in the reactor is not possible during the long-term cooling period of LOCAs. This is mainly due to the fact that the ice-condenser in the Loviisa plant contains Na₂B₄O₇.10H₂O (borax), which enters the reactor when emergency core cooling water is taken from the sump. Borax increases greatly the solv. of H₃BO₃ in water and, hence, decreases the risk of crystn.
 ST WWR coolant loss accident boric acid; reactor coolant accident cooling period
 IT Computer program
 (for boric acid concn.
 measurements in reactor during loss-of-coolant accidents, RELAP5/MOD3)
 IT Simulation and Modeling, physicochemical (of WWER-440 reactor boron concns.)
 IT Nuclear reactors, water-cooled (WWR, accidents, loss-of-coolant, boric acid concns. in WWER-440, during long-term cooling)
 IT 10043-35-3, Boric acid, uses
 RL: USES (Uses)
 (concns. of, in WWER-440 reactor during long-term cooling period of loss-of-coolant accidents)
 IT 1303-96-4, Borax
 RL: PROC (Process)
 (in ice-condenser in Loviisa nuclear power plant during long-term cooling period of loss-of-coolant accidents)

L58 ANSWER 10 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1995:97412 HCAPLUS
 DN 122:45196
 TI Determination of H₃BO₃ concentration in Cr(III) plating bath

AU Li, Huidong; Duan, Shuzhen; Zhang, Xin
 CS Beijung Univ. Stir Tech., Buijing, Peop. Rep. China
 SO Cailiao Baohu (1994), 27(3), 29-30
 CODEN: CAIBE3; ISSN: 1001-1560
 DT Journal
 LA Chinese
 CC 79-6 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 72
 AB An acid-base titrn. is studied for the detn. of H₃BO₃ concn. in Cr(III) plating bath. The interference of Cr³⁺ and NH₄⁺ are eliminated by alkalization and sepn. The titrn. is performed using cresol red as indicator.
 ST boric acid detn acid base titrn; plating bath copper analysis boric acid
 IT Titration
 (acid-base, detn. of H₃BO₃ concn. in Cr(III) plating bath by acid-base titrn.)
 IT 10043-35-3, Boric acid (H₃BO₃),
 analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of H₃BO₃ concn. in Cr(III) plating bath by acid-base titrn.)
 IT 1733-12-6, Cresol red
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (detn. of H₃BO₃ concn. in Cr(III) plating bath by acid-base titrn.)
 IT 7440-47-3, Chromium, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (detn. of H₃BO₃ concn. in Cr(III) plating bath by acid-base titrn.)

L58 ANSWER 11 OF 57 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
 AN 1993-336009 [42] WPIDS
 CR 1992-389961 [47]; 1993-336008 [42]; 1993-336010 [42]; 1993-395244 [49];
 1994-150369 [18]
 DNN N1993-259785 DNC C1993-148593
 TI Water-based fracturing fluid - comprising water, a hydratable guar polymer and an aq. soln. of boron alpha hydroxy carboxylic acid salt.
 DC A11 A60 A97 E19 H01 Q49
 IN SHARIF, S
 PA (ZIRC-N) ZIRCONIUM TECHNOLOGY CORP
 CYC 1
 PI US 5252235 A 19931012 (199342)* 8p E21B043-26
 ADT US 5252235 A Div ex US 1991-705605 19910524, US 1992-927976 19920811
 FDT US 5252235 A Div ex US 5160445
 PRAI US 1991-705605 19910524; US 1992-927976 19920811
 IC ICM E21B043-26
 AB US 5252235 A UPAB: 19940627
 A water-based fracturing fluid is claimed, comprising: (a) water; (b) a hydratable polymer capable of gelling in the presence of a crosslinker, the polymer selected from galactomannan guar polymer, hydroxypropyl guar and carboxymethyl hydroxypropyl guar polymers; (c) an aq. soln. of boron alpha hydroxy carboxylic acid salt in which the concn. of boron measured as boric acid is sufficient to establish a cationic electrostatic bonding site on the hydratable polymer with the carboxy gp. and the hydroxyl gp. sharing the cation.

The hdyratable polymer is present in the water base fracturing fluid at 20-60lb/1000 gallons of water, and the aq. soln. of boron alpha hydroxy carboxylic acid salt is present in the water base fracturing fluid at 0.5-3gals/1000 gallons of fracturing fluid.

USE/ADVANTAGE - Provides stable, conc. boric acid solns. for use in water-based fracturing fluids. The novel solns. are capable of crosslinking neutral -pH guar and substd. guar gum solns. providing delayed crosslinking action without the need for buffers to be added to

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the fracturing fluid prior to addn. of the crosslinkers. The solns. are stable for in excess of 6 months and through at least 3 freeze and thaw cycles.

Dwg. 0/0

FS CPI GMPI

FA AB; DCN

MC CPI: A03-A00A; A08-D01; A12-W10B; E10-C02A; E10-C04D4; E31-Q05; H01-C03

L58 ANSWER 12 OF 57 HCAPLUS COPYRIGHT 2000 ACS

AN 1992:486348 HCAPLUS

DN 117:86348

TI Sample diluent containing bistris and boric acid for measurement with ion-selective electrodes and method of using the same

IN Sekiguchi, Mitsu; Furuta, Yoshiteru; Tokinaga, Daizo

PA Hitachi, Ltd., Japan

SO Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G01N033-84

ICS G01N027-30

CC 9-7 (Biochemical Methods)

Section cross-reference(s): 79

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 469468	A2	19920205	EP 1991-112502	19910725
	EP 469468	A3	19930609		
	EP 469468	B1	19950412		
	R: DE, FR, GB, IT JP 05209857 CA 2048142 CA 2048142 US 5228973	A2 AA C A	19930820 19920131 19950404 19930720	JP 1991-184330 CA 1991-2048142 US 1991-737696	19910724 19910730 19910730
PRAI	JP 1990-199296		19900730		
AB	A diluent for samples for detn. of ion concn. using ion-selective electrodes comprises an aq. soln. contg. bistris and boric acid. Na ⁺ , K ⁺ , and Cl ⁻ were detd. in blood serum and urine samples dild. with bistris-boric acid soln.; the soln. was a very good buffer.				
ST	bistris boric acid buffer ion electrode; sodium selective electrode diluent; potassium selective electrode diluent; chloride selective electrode diluent; urine diluent buffer bistris boric acid; blood diluent buffer bistris boric acid				
IT	Electrolytes, biological (detn. of, in body fluid by ion-selective electrode, bistris-boric acid sample diluent for)				
IT	Blood analysis Body fluid Urine analysis (ions detn. in, by ion-selective electrodes, bistris-boric acid sample diluent for)				
IT	Electrodes (chloride-selective, bistris-boric acid sample diluent for)				
IT	Electrodes (ion-selective, bistris-boric acid sample diluent for)				
IT	Electrodes (potassium-selective, bistris-boric acid sample diluent for)				
IT	Electrodes (sodium-selective, bistris-boric acid sample diluent for)				
IT	142108-68-7 RL: ANST (Analytical study) (as sample diluent for ion detn. using ion-selective electrodes)				
IT	16887-00-6, Chloride, analysis				

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RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, by chloride-selective electrode, bistris-boric
 acid sample diluent for)
 IT 7440-09-7, Potassium, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, by potassium-selective electrode, bistris-boric
 acid sample diluent for)
 IT 7440-23-5, Sodium, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, by sodium-selective electrode, bistris-boric
 acid sample diluent for)

L58 ANSWER 13 OF 57 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
 AN 1992-399906 [49] WPIDS
 DNC C1992-177373
 TI Controlling high temp. pH value in PWR prim coolant - by means
 of an ion exchanger and associated pH, ammonia and boric
 acid concn. and conductivity measurement.
 DC K05
 IN BRAESEL, E
 PA (ENER-N) ENERGIEWERKE NORD AG
 CYC 1
 PI DE 4117069 A 19921126 (199249)* 4p G21C017-022
 ADT DE 4117069 A DE 1991-4117069 19910522
 PRAI DE 1991-4117069 19910522
 IC ICM G21C017-022
 AB DE 4117069 A UPAB: 19931116
 The process operates on a sample stream of water taken from the prim.
 coolant and fed to the ion exchanger. The sample water is cooled,
 depressurised and at least partly degassed. Electrical conductivity and pH
 meters are arranged around the ion exchanger to monitor the correct
 working of the ion exchanger. In conjunction with boric
 acid and ammonia concn. measurements, they
 permit control of the alkalinity against boric acid
 operating curve used in running the reactor.
 ADVANTAGE - Control of the reactor high temp. pH value is made
 possible by the immediate discovery of any undesired pH value fluctuations
 by the process, enabling necessary corrections to be made9
 Dwg.0/1
 FS CPI
 FA AB
 MC CPI: K05-B06B

L58 ANSWER 14 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1993:204224 HCPLUS
 DN 118:204224
 TI The effect of temperature on the reading of neutron [absorption] analyzer
 for boron
 AU Bartovsky, Tomas; Rypar, Vojtech; Petros, Libor; Bartovska, Lidmila
 CS Ustav Fyz. Merici Tech., VSCHT, Prague, 166 28, Czech.
 SO Chem. Listy (1992), 86(12), 913-19
 CODEN: CHLSAC; ISSN: 0009-2770
 DT Journal
 LA Czech
 CC 79-6 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 61, 71
 AB The correction of H₃BO₃ concn. data detd. in
 aq. solns. in nuclear reactors by neutron absorption is proposed for the
 temp. range 20-80.degree.. The correction involves changes caused by
 temp. expansion of soln., which was detd. for concn. 4.7-49.2 kg H₂BO₃/m³,
 and by changing the effective cross area of B at. nucleus and cannot be
 affected by design of the analyzer. The temp. changes in sensitivity of
 the detector and elec. circuits and the concn. variation caused by soln.
 prepns. were also considered.

ST temp effect boric acid detn nuclear; neutron absorption boric acid detn;
 nuclear reactor analysis boric acid
 IT Nuclear reactors
 (boric acid detn. in water of, by neutron absorption, effect of temp.
 on)
 IT 7440-42-8, Boron, analysis 10043-35-3, **Boric acid (H₃BO₃)**, analysis
 RL: **ANT (Analyte); ANST (Analytical study)**
 (detn. of, by neutron absorption, effect of temp. on)

L58 ANSWER 15 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1993:93382 HCPLUS
 DN 118:93382
 TI Iodometric determination of tin in tungsten concentrates
 with zinc powder-borax-**boric acid** as flux
 AU He, Zhenrong
 CS Jiangxi Prov. Dayu Nonferrous Metal Refin., 341500, Peop. Rep. China
 SO Fenxi Shiyanshi (1992), 11(3), 56
 CODEN: FENSE4
 DT Journal
 LA Chinese
 CC 79-6 (Inorganic Analytical Chemistry)
 AB The tungsten conc. sample is melted using the title flux. W is reduced
 into metallic form which is not dissolved in HCl soln. Sn is detd. by
 iodometric titrn. without matrix interference. The method was tested with
 std. sample.
 ST tin detn iodometric titrn; tungsten conc analysis tin; zinc borax boric
 acid flux tungsten
 IT 7440-31-5, Tin, analysis
 RL: **ANT (Analyte); ANST (Analytical study)**
 (detn. of, in tungsten concs. by iodometric titrn.
 using zinc powder-borax-**boric acid** mixt. flux)
 IT 7440-66-6, Zinc, uses
 RL: USES (Uses)
 (flux contg. borax and **boric acid** and powder of,
 for tin detn. in tungsten concs. by iodometric
 titrn.)
 IT 10043-35-3, **Boric acid (B(OH)₃)**, uses
 RL: USES (Uses)
 (flux contg. borax and powder zinc and, for tin detn. in
 tungsten concs. by iodometric titrn.)
 IT 1303-96-4, Borax
 RL: **ANST (Analytical study)**
 (flux contg. powder zinc and **boric acid** and, for
 tin detn. in tungsten concs. by iodometric titrn.)
 IT 7440-33-7, Tungsten, analysis
 RL: **ANST (Analytical study)**
 (tin detn. in concs. of, by iodometric titrn. using
 zinc powder-borax-**boric acid** mixt. flux)

L58 ANSWER 16 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1991:549355 HCPLUS
 DN 115:149355
 TI Ascorbic acid as a matrix modifier for determination of tin in
 concentrated **boric acid** solutions by
 electrothermal atomic absorption spectrometry
 AU Volynsky, A. B.; Sedykh, E. M.; Bannykh, L. N.
 CS V. I. Vernadskii Inst. Geochem. Anal. Chem., Moscow, 117975, USSR
 SO Talanta (1991), 38(7), 761-5
 CODEN: TLNTA2; ISSN: 0039-9140
 DT Journal
 LA English
 CC 79-6 (Inorganic Analytical Chemistry)
 AB The at.-absorption signal of tin is reduced in the presence of 5 .mu.L of
 KATHLEEN FULLER EIC 1700 308-4290

0.05-0.30M boric acid at stabilized temp. platform furnace conditions. The reason is the formation of SnB(g) at the atomization stage. In the presence of palladium chloride the interferences from 0.2M boric acid are reduced by a factor of 1.3. The interferences are reduced most effectively when the sample is atomized from a polycryst. graphite platform or in the presence of ascorbic acid. The interference of up to 0.2M boric acid can be suppressed and the area of the tin signal doubled. The obsd. phenomenon is connected with the bonding of boron as non-volatile B₄C. Ascorbic acid is the most effective matrix modifier for the detn. of trace elements in boron compds.

ST tin detn electrothermal atomic absorption spectrometry; boric acid concd analysis tin; ascorbic acid matrix modifier tin AAS

IT 50-81-7, Ascorbic acid, uses and miscellaneous

RL: USES (Uses)

(as matrix modifier for tin detn. in boric acid by electrothermal at. absorption spectrometry)

IT 7440-05-3, Palladium, uses and miscellaneous

RL: USES (Uses)

(as matrix modifier in tin electrothermal at. absorption spectrometric detn. in presence of boric acid)

IT 7440-31-5, Tin, analysis

RL: ANT (Analyte); ANST (Analytical study)

(detn. of, in concd. boric acid
by electrothermal at. absorption spectrometry, ascorbic acid as matrix modifier in)

IT 10043-35-3, Boric acid, analysis

RL: AMX (Analytical matrix); ANST (Analytical study)

(tin detn. in, by electrothermal at. absorption spectrometry, ascorbic acid as matrix modifier in)

L58 ANSWER 17 OF 57 HCPLUS COPYRIGHT 2000 ACS

AN 1991:693995 HCPLUS

DN 115:293995

TI Fluorometric determination of boron with chromotropic acid by flow-injection analysis

AU Motomizu, S.; Oshima, M.; Jun, Z.

CS Fac. Sci., Okayama Univ., Okayama, 700, Japan

SO Anal. Chim. Acta (1991), 251(1-2), 269-74

CODEN: ACACAM; ISSN: 0003-2670

DT Journal

LA English

CC 79-6 (Inorganic Analytical Chemistry)

Section cross-reference(s): 61

AB Boron as boric acid was detd. with chromotropic acid using a fluorescence detection-flow injection system. The flow system consisted of three streams, a carrier, a reagent and an alk. soln. By mixing 0.5M sodium hydroxide soln. as the alk. soln., the high background fluorescence of the reagent was diminished and the sensitivity was enhanced. The determinable concn. of boric acid

was in the range 1 .times. 10-8-1 .times. 10-4M. The detection limit was 5 .times. 10-9M of boron, corresponding to a signal-to-noise ratio of 3. The sample throughput was 60 h-1. The method was applied to the detn. of boron as boric acid in water samples.

ST boron detn flow injection fluorometry; boric acid flow injection fluorometry; chromotropic acid reagent boron; water analysis boron

IT 7732-18-5, Water, analysis

RL: AMX (Analytical matrix); ANST (Analytical study)
(boron detn. in, by flow-injection fluorometry)

IT 7440-42-8, Boron, analysis 10043-35-3, Boric acid, analysis

RL: ANT (Analyte); ANST (Analytical study)
(detn. of, by flow-injection fluorometry)

IT 148-25-4, Chromotropic acid

RL: ANST (Analytical study)

(in boron detn. by flow-injection fluorometry)

L58 ANSWER 18 OF 57 COMPENDEX COPYRIGHT 2000 EI
 AN 1992(3):30904 COMPENDEX DN 920336511
 TI Monitoring the boron concentration in the vver-1000 reactor
 coolant by recording multiple gamma quanta of ^7Li nuclei.
 AU Zhemzhurov, M.L. (Acad of Sciences of the Belorussian SSR, USSR);
 Levadnyi, V.A.; Lukhvich, A.A.
 SO Sov At Energy v 70 n 3 Sep 1991 p 242-245
 CODEN: SATEAZ ISSN: 0038-531X
 PY 1991
 DT Journal
 TC General Review
 LA English
 AB Compared with discrete methods of manual monitoring, qualitatively new capabilities of reactivity control are provided by continuous inner-circuit monitoring of the **boric acid** concentration in the **coolant**. The currently used neutron absorption method for continuous monitoring has shortcomings such as inertia (2-5 min), a large measurement error (not less than 4%), and the need for an external neutron source. These shortcomings have stimulated research on new nuclear physics methods facilitating a reliable, continuous innercircuit monitoring of the ^{10}B concentration (boron, **boric acid**) directly in the **coolant** of a reactor working at full power. The authors consider in this article the measurement of the ^{10}B concentration in the **coolant** by recording the multiple 477.7 keV gamma quanta of excited ^7Li nuclei which are produced in the current of the circulating coolant in the $^{10}\text{B}(\text{n}, \alpha)^7\text{Li}$ reaction initiated by the neutron emission of ^{17}N .
 CC 621 Nuclear Reactors; 542 Light Metals & Alloys; 549 Nonferrous Metals & Alloys; 804 Chemical Products; 622 Radioactive Materials
 CT *NUCLEAR REACTORS:Cooling Systems; GAMMA RAYS:Measurements;
 LITHIUM AND ALLOYS:Radioactivity; BORON:Measurements
 ST REACTIVITY CONTROL
 ET B; ^{10}B ; is; B is; Li; ^7Li ; Li is; $\text{B}(\text{n}, \alpha)^7\text{Li}$; $^{10}\text{B}(\text{n}, \alpha)^7\text{Li}$; ^{10}B t;
 n r; n alpha ; ^7Li f

L58 ANSWER 19 OF 57 COMPENDEX COPYRIGHT 2000 EI DUPLICATE 1
 AN 1991(9):106466 COMPENDEX DN 9109109476
 TI Development of boric acid concentration meter for advanced thermal reactors.
 AU Arita, Tadaaki (Sumitomo Heavy Ind., Ltd, Jpn); Aoi, Hideki; Hayashi, Ken-ichi; Tominaga, Hiroshi; Iijima, Takashi; Wada, Nobuo; Tachikawa, Noboru
 SO Nippon Genshiryoku Gakkaishi v 33 n 2 Feb 1991 p 152-160
 CODEN: NGEGLA ISSN: 0004-7120
 PY 1991
 DT Journal
 TC Application; General Review; Experimental
 LA Japanese
 AB A **boric acid** concentration meter was developed for continuous measurement of the ^{10}B concentration in heavy water in a nuclear reactor. The principle of the meter is based on slowing-down of fast neutrons from a radioisotopic neutron source by heavy water and absorption of slowed-down neutrons by ^{10}B depending on its concentratior. The errors in the measurement are casused by temperature changes, photoneutron generation etc.in sampled heavy water and instrumental instability of a neutron measuring system. Laboratory tests with fresh heavy water containing no gamma -emitter and demonstration tests at 'FUGEN' power plant were carried out, to evaluate the factors of errors separately, and correction techniques for photoneutrons etc.were developed. The results of the tests showed that the meter developed had a measurement precision better than plus or minus 0.1ppm ^{10}B in a range of 0

CC approx.30 ppm10B.(Author abstract) 4 Refs.In Japanese.
 CC 944 Moisture, Pressure & Temperature, & Radiation Measuring Instruments;
 CT 804 Chemical Products; 621 Nuclear Reactors
CT *NUCLEAR INSTRUMENTATION; NUCLEAR REACTORS:Measurements;
ACIDS:Measurements
 ST BORIC ACID; CONCENTRATION METERS
 ET B; 10B; is; B is

L58 ANSWER 20 OF 57 JICST-EPlus COPYRIGHT 2000 JST
 AN 900527671 JICST-EPlus
 TI Two cases of boric acid ingestion.
 AU NISHIMURA RIEKO; HIRABAYASHI YOICHI; HASUI MASASHI; KOBAYASHI YONOSUKE;
 YOSHIDA MANABU; ISHIDA TETSUO
 CS Kansai Medical Univ.
 SO Shonika (Pediatrics of Japan), (1990) vol. 31, no. 4, pp. 497-500. Journal
 Code: Z0442B (Fig. 1, Tbl. 1, Ref. 11)
 ISSN: 0037-4121
 CY Japan
 DT Journal; Article
 LA Japanese
 STA New
 CC GD06010Q (616.39-099)
 CT human(primates); case report; boric acid; swallowing; urinary
 excretion; baby; infantile disease; accident; quantitative
 analysis(analytical chemistry); blood concentration; concentration
 determination; color reaction; drug poisoning; aspiration of food;
 diene; phenolic compound; natural colorant; biopigment; phenol ether;
 enone
 BT reporting; action and behavior; boron oxyacid; oxyacid; oxygen compound;
 oxygen group element compound; boron compound; 3B group element compound;
 digestive system physiology; excretion; child; growth stage; disease;
 analysis(separation); analysis; concentration(ratio); degree; measurement;
 detection method; poisoning(disease); error(mistake); polyene; olefin
 compound; hydroxy compound; aromatic compound; food coloring agent; food
 additive; additive; admixture; material; coloring matter; ether;
 unsaturated ketone; ketone; carbonyl compound

L58 ANSWER 21 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1992:520253 HCPLUS
 DN 117:120253
 TI Concentration dependence of the reading of a boron-measuring instrument
 using neutron absorption
 AU Bartovsky, Tomas; Petros, Libor; Racek, Jaroslav; Kysela, Jan; Bartovska,
 Lidmila
 CS VSCHT, Prague, Czech.
 SO Sb. Vys. Sk. Chem.-Technol. Praze, P: Fyz. Mater. Merici Tech. (1990),
 P11, 85-101
 CODEN: PFMMDT; ISSN: 0139-7575
 DT Journal
 LA Czech
 CC 71-7 (Nuclear Technology)
 Section cross-reference(s): 79
 AB Instruments used for measuring the concn. of
 H_3BO_3 by n absorption are described. A comparison of different
 arrangements is made. Data measured by the authors as well as data from
 other sources are discussed. Recommendations for the best arrangement are
 stated, and the simplicity of calcns. and the influence of noise on the
 resulting precision are considered.
 ST concn dependence neutron absorption boron; boric acid
 concn measurement app; boron concn measurement app
 IT 12586-31-1, Neutron
 RL: USES (Uses)
 (absorption of, concn. dependence of reading of boron-measuring
 instrument using)

IT 7440-42-8, Boron, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (concn. detn. of, by neutron absorption, instrument reading dependence
 in relation to)

IT 10043-35-3, Boric acid (H₃BO₃),
 analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (concn. detn. of, by neutron absorption, instrument
 reading dependence on concn. of boron in relation to)

L58 ANSWER 22 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1990:100620 HCAPLUS
 DN 112:100620
 TI Determination of poly(vinyl alcohol) in fabric desizing aqueous solution
 IN Santo, Yoshiteru; Nakano, Eiichi; Ishidoshiro, Hiroshi
 PA Sando Iron Works Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G01N021-77
 ICS G01N031-00; G01N033-36
 CC 40-8 (Textiles and Fibers)
 Section cross-reference(s): 80

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01250049	A2	19891005	JP 1988-77499	19880330

AB Poly(vinyl alc.) (I) in the soln., produced in a continuous desizing machine, is detd. by controlling I concn. .apprx.3-12 ppm, coloring with 1.5% H₃BO₃ and 50 ppm I, and measuring the transmittance.

ST polyvinyl alc detn desizing soln; desizing fabric pretreatment analysis

IT Textiles
 (desizing pretreatment soln. for, poly(vinyl alc.) detn. in, by colorimetry)

IT Sizes
 (removal of, pretreatment soln. for, poly(vinyl alc.) detn. in, colorimetry)

IT 9002-89-5, Poly(vinyl alcohol)
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, by colorimetry with iodine and boric acid , in fabric desizing soln.)

IT 7553-56-2, Iodine, uses and miscellaneous 10043-35-3, Boric acid, uses and miscellaneous
 RL: USES (Uses)
 (poly(vinyl alc.) colored by, for detn., in fabric desizing soln.)

L58 ANSWER 23 OF 57 NTIS COPYRIGHT 2000 NTIS
 AN 1990(01):803 NTIS Order Number: DE89617891/XAD
 TI Determination of Boron as Boric Acid by Automatic Potentiometric Titration.
 AU Midgley, D.
 CS Central Electricity Generating Board, Leatherhead (England). Central Electricity Research Labs (005816001; 7041090)
 NR DE89617891/XAD; CEGB-TPRD/L-3259/R88; PWR/ASG/P-87-9
 16 p. NTIS Prices: PC A03/MF A01
 Availability: U.S. Sales Only.
 PD Jun 1988
 LA English CY United Kingdom
 OS GRA&I9001; Atomindex citation 20:048048
 AB Boron in PWR primary coolant and related waters may be determined as boric acid by titration with sodium hydroxide, using a glass electrode as a pH KATHLEEN FULLER EIC 1700 308-4290

indicator. With a modern automatic titrator, the analysis is quick, convenient, accurate and precise. In the titration of 8 mg B (e.g. 4 ml of 2000 mg/l solution), no significant bias was observed and relative standard deviations were about 0.25%. With 0.8 g B, a bias of about 2% appears, although this could be reduced by restandardizing the titrant, but the relative standard deviation was still < 0.5%. The lithium hydroxide added to primary coolant would cause a negative bias, but a simple correction may be applied using the routinely determined lithium concentration. The titrator is, therefore, suitable for routine use in a PWR station, where the primary coolant contains 100-2000 mg/l B, depending on the stage of the fuel cycle.

CC 77J Reactor materials
 97Q Selected studies in nuclear technology
 99A Analytical chemistry
 CT *Boron; *Primary Coolant Circuits; *Quantitative Chemical Analysis; Boric Acid; PWR Type Reactors; Potentiometry; Sodium Hydroxides
 *Foreign technology
 UT ENERGY CL 400102; ENERGY CL 210200; NTISINIS

L58 ANSWER 24 OF 57 JICST-EPlus COPYRIGHT 2000 JST
 AN 880482810 JICST-EPlus
 TI Review on the present situation in water chemistry monitoring systems in the nuclear power plants in Finland.
 AU CHANFREAU E; AALTONEN P
 PAAVOLA A
 REINWALL A
 CS Technical Research Centre of Finland, Espoo, FIN
 Imatra Power Co., Loviisa, FIN
 Industrial Power Co., Olkiluoto, FIN
 SO Proc 1988 JAIF Int Conf Water Chem Nucl Power Plants Vol 2, (1988) pp. 622-628. Journal Code: K19880574 (Fig. 5, Tbl. 1, Ref. 2)
 CY Japan
 DT Conference; Commentary
 LA English
 STA New
 CC MD05040W; MD04040P (621.039.568; 621.039.534)
 CT Finland; PWR type reactor; BWR type reactor; nuclear power generation; power plant; common use; reactor cooling system; reactor coolant; cooling water; boiler feed water; water quality; water management; monitor; automatic monitoring; online system; hydrogen ion concentration; hydrogen; boric acid; electrical conductivity; oxygen; sodium; concentration determination; dissolved component; dissolved oxygen; corrosion prevention; measurement error
 BT Scandinavia Countries; Europe; light water reactor; thermal neutron reactor; nuclear reactor; power generation; electric power energy operation; electric power facility; action and behavior; reactor component; reactor material; material; service water; water; property; management; equipment; monitoring; system; acidity; degree; concentration(ratio); element; boron oxyacid; oxyacid; oxygen compound; oxygen group element compound; boron compound; 3B group element compound; ratio; transport coefficient; coefficient; oxygen group element; second row element; alkali metal; metallic element; third row element; measurement; component; dissolved gas(entrainment); gas; error(measure)

L58 ANSWER 25 OF 57 JICST-EPlus COPYRIGHT 2000 JST
 AN 880432619 JICST-EPlus
 TI Development of the **boric acid concentration** measuring instrument for advanced thermal reactors.
 AU ARITA TADA AKI
 OKUBO SEISHIRO
 CS Sumitomo Heavy Industries, Ltd.
 Power Reactor and Nuclear Fuel Development Corp.
 SO Nippon Aisotopu, Hoshasen Sogo Kaigi Ronbunshu (Proceedings of the Japan Conference on Radiation and Radioisotopes), (1988) vol. 18th, pp. 290-304.

CY Journal Code: F0880A (Fig. 6, Ref. 2)
 CY Japan
 DT Conference; Commentary
 LA Japanese
 STA New
 CC MD05030L (621.039.564)
 CT heavy water reactor; boric acid; boron isotope; neutron moderator; concentration determination; measuring instrument; heavy water; neutron detection; calibration; correction(compensation); testing device; instrumentation; time course; measurement error
 BT thermal neutron reactor; nuclear reactor; boron oxyacid; oxyacid; oxygen compound; oxygen group element compound; boron compound; 3B group element compound; light nucleus; atomic nucleus; isotope; material; measurement; deuterium compound; compound(chemical); water; radiation detection; detection; correction(modification); equipment; variation; error(measure)

L58 ANSWER 26 OF 57 CEABA COPYRIGHT 2000 DECHEMA
 AN 1989:50827 CEABA
 TI Chromium trace determination in inorganic, organic and aqueous samples with isotope dilution mass spectrometry
 Chromspurenbestimmung in anorganischen, organischen und waessrigen Proben mit der massenspektrometrischen Isotopenverduennungsanalyse
 AU Goetz, A.; Heumann, K.G. (Univ. Regensburg, D)
 SO Fresenius' Z. Anal. Chem. (1988) 331(2), p.123-128, 1f, 4t, 341
 CODEN: ZACFAU ISSN: 0016-1152
 DT Journal
 LA German
 AB It is shown that chromium traces in different inorganic, organic and aqueous samples can be determined over a wide concentration range with isotope dilution mass spectrometry.
 Electrolytic or chromatographic isolation steps are added to a system of sample preparation units for oligo-element determinations to analyse chromium besides other heavy metals. The isotope ratio 52.Cr/53.Cr is measured in a thermal quadrupole mass spectrometer using a single-filament ion source with additions of silica gel and boric acid. In water samples, which contain humic substances, chromium concentrations of a few ng/g and less can be determined with relative standard deviations of about 1 % and better. A differentiation is possible into the total chromium content and into chromium species which carry out isotope exchange reactions and those which are inert for an isotope exchange reaction. The chromium concentrations of four standard reference materials (two plants BCR 60 and 61, one tissue BCR 278, one sewage sludge BCR 144), which are not certified for chromium, are determined to be 29.4 mg/g, 534 mg/g, 0.78 mg/g, and 466.1 mg/g, respectively. The detection limit is 0.3 pg chromium per g for water samples, 1.8 ng/g for organic substances, and 6 ng/g for materials with high inorganic proportions as for sediments, sewage sludges and soils.
 (Author)
 CC 2213 Physical methods
 225 Analytical equipment
 CT CHROMIUM; MASS SPECTROMETRY; TRACE ANALYSIS
 ST SAMPLE; FUSION PROCESS; ORGANIC; INORGANIC; AQUEOUS; ISOTOPE DILUTION; CHROMSPURENBESTIMMUNG; CHEMISCHES AUFSCHLIESSEN

L58 ANSWER 27 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1988:212121 HCAPLUS
 DN 108:212121
 TI Changes in the pH of reactor water at nuclear power plants with water-cooled water-moderated reactors during operation
 AU Khil'debrandt, N. I.; Nikitin, A. V.
 CS Mosk. Energ. Inst., Moscow, USSR
 SO Teploenergetika (Moscow) (1988), (4), 58-60
 CODEN: TPLOA5; ISSN: 0040-3636
 DT Journal

LA Russian
 CC 71-4 (Nuclear Technology)
 AB The principal parameter used for monitoring and regulating the water-chem. conditions of the primary circuit of a nuclear power plant with a WWER is the pH of the coolant. The ratio was detd. between the concns. of H₃BO₃ and alkali (KOH, LiOH, NaOH) at which the pH is 7. The dependence is shown of the pH on the concn. of H₃BO₃ and alkali at 25.degree. and const. concn. of NH₃ of 10 mg/kg. The ratio of the overall concn. of alkali metals (calcd. with respect to K⁺) and the concn. of H₃BO₃ maintained in the reactor water of the WWER-1000 is presented. The change in pH of the coolant of the WWER-440 and WWER-1000 reactors at the inlet temp. in the core during the operating period is also shown.
 ST pH reactor water power plant; boric acid alkali reactor water; WWR water chem pH effect
 IT Nuclear reactors, water-cooled
 (WWR, power plants, pH changes of water of, during full-power operation)
 IT 1310-58-3, Potassium hydroxide, properties 1310-65-2, Lithium hydroxide
 1310-73-2, Sodium hydroxide, properties 10043-35-3, Boric acid (H₃BO₃), properties
 RL: PRP (Properties)
 (pH change of WWR water contg., in nuclear power plants)
 IT 7664-41-7, Ammonia, properties
 RL: PRP (Properties)
 (pH dependence on boric acid and alkali concns. in WWR water contg.)

 L58 ANSWER 28 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1989:241706 HCPLUS
 DN 110:241706
 TI Potentiometric determination of boric acid in nickel electroplating baths
 AU Nabivanets, B. I.; Gorina, D. O.; Sobol, T. A.
 CS USSR
 SO Vestn. Kiev. Politekh. Inst., Khim. Mashinostr. Tekhnol. (1988), 25, 25-6
 CODEN: VKMTAC; ISSN: 0372-6045
 DT Journal
 LA Russian
 CC 79-6 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 72
 AB H₃BO₃ was detd. in Ni electroplating baths by potentiometric titrn. without removing Ni. Mannitol was added to form a stronger acid and the end-point of the titrn. with alkali was detected by monitoring the pH change by a glass electrode. The optimal concn. of the detd. H₃BO₃ is 10-40 g/L. A formula is given for the calcn.
 ST boric acid detn potentiometric titrn; mannitol reagent boric acid detn; nickel electroplating bath analysis boric acid
 IT 10043-35-3, Boric acid, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in nickel electroplating baths by potentiometric titrn.)
 IT 7440-02-0, Nickel, uses and miscellaneous
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (electroplating of, boric acid detn. in baths for)

 L58 ANSWER 29 OF 57 JICST-EPlus COPYRIGHT 2000 JST
 AN 860531458 JICST-EPlus
 TI Determination of atmospheric NH₃ using with a diffusion sampler.
 AU ISHII KOICHIRO; AOKI KAZUYUKI
 CS Tokyotokankkyokaken
 SO Tokyo Kankyo Kagaku Kenkyujo Nenpo (Annual Report of the Tokyo Metropolitan Research Institute for Environmental Protection), (1986) vol. 1986, pp. 39-43. Journal Code: S0679A (Fig. 4, Tbl. 1, Ref. 17)
 CY Japan
 DT Journal; Article

LA Japanese
 STA New
 CC SB03040I (614.71/.73:543.27)
 CT air pollution; ammonia; air quality test; concentration determination; sampling; sampler; personal monitoring; air monitoring; pollution monitoring; boric acid; detection limit; measurement accuracy; air pollutant; ether; aliphatic alcohol; nitrogen heterocyclic compound
 BT environmental pollution; pollution; hydride; hydrogen compound; nitrogen compound; nitrogen group element compound; test; analysis(separation); analysis; measurement; sampling and winning; experimental tool; utensil; monitoring; boron oxyacid; oxyacid; oxygen compound; oxygen group element compound; boron compound; 3B group element compound; limit; concentration(ratio); degree; accuracy; pollutant; matter; alcohol; hydroxy compound; heterocyclic compound
 L58 ANSWER 30 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1987:39943 HCAPLUS
 DN 106:39943
 TI The determination of process variables of the coolant and the reactor on the base of monitoring the neutron flux from the coolant
 AU Skatkin, V. M.; Volkov, S. V.; Zhernov, V. S.
 CS Union Res. Inst. Instrum., Moscow, USSR
 SO Zentralinst. Kernforsch., Rossendorf Dresden, [Ber.] ZfK (1985), ZfK-568, IAEA-NPPCI Spec. Meet. New Instrum. Water Cooled React. 112-24
 CODEN: ZKRDBY; ISSN: 0138-2950
 DT Report
 LA English
 CC 71-3 (Nuclear Technology)
 AB A method and a device for the measurement of the n flux absorber content in the water coolant of nuclear reactors in nuclear power plants are described. The method and the device may be used as well to monitor the steam content in the coolant of boiling reactors, and to detect failed fuel elements. The dependence of the device readings on the energy of fast n and the optimum thickness of the moderator in the presence of the external background were detd. by calcns. The high sensitivity of the method for the measurement of the boric acid concn. in the WWPR coolant was verified exptl.
 ST neutron reactor coolant flux; boric acid reactor coolant neutron
 IT Nuclear reactors, water-cooled
 (coolants and cooling systems, process variable detn. of, neutron flux monitoring in relation to)
 IT 10043-35-3, Boric acid, uses and miscellaneous
 RL: USES (Uses)
 (nuclear reactor coolant, neutron flux monitoring and process variable detn. in relation to)
 L58 ANSWER 31 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1987:429710 HCAPLUS
 DN 107:29710
 TI Improvement of the accuracy and operational monitoring of boric acid content in reactor water during a physical start up of a nuclear power plant unit
 AU D'yachkov, V. I.; Tsybul'nik, L. P.
 CS USSR
 SO At. Elektr. Stn. (1985), 8, 45-53
 CODEN: AESTDA
 DT Journal
 LA Russian
 CC 71-3 (Nuclear Technology)
 Section cross-reference(s): 73, 79

AB A chemiluminescent automatic analyzer for H₃BO₃ can be used for the automated measurement during phys. and power startups, power management and generation of nuclear power plants with WWER-type reactors. The dependence is shown of the intensity of chemiluminescence on the presence of Fe²⁺ impurity with and without Trilon B. The spectral characteristics are shown of the different photoreceptors of chemiluminescence in the wavelength range of 350-700 nm. The range of detection of H₃BO₃ and the optimal concn. of alkali corresponding to it in the chemiluminescent soln. are tabulated. Results are presented of concn. measurements of H₃BO₃ in radioactive reactor waters of units I and II of the Rovensk Nuclear Power Plant.

ST boric acid content reactor water; reactor startup power plant; chemiluminescence boric acid detn water

IT Nuclear reactors, water-cooled (WWR, coolants and cooling systems, boric acid content detn. in, during startup)

IT 10043-35-3, Boric acid (H₃BO₃), analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in reactor water during phys. startup of nuclear power plant)

IT 64-02-8, Trilon B 7439-89-6, Iron, uses and miscellaneous
RL: PROC (Process)
(impurity, in reactor water during startup, boric acid detn. in relation to)

IT 1310-58-3, Potassium hydroxide, uses and miscellaneous 7664-41-7,
Ammonia, uses and miscellaneous
RL: USES (Uses)
(in nuclear reactor power plant, monitoring of boric acid in reactor water in relation to)

L58 ANSWER 32 OF 57 HCPLUS COPYRIGHT 2000 ACS
AN 1984:445006 HCPLUS
DN 101:45006
TI Relative importance of temperature, pH and boric acid concentration on rates of hydrogen production from galvanized steel corrosion
AU Loyola, V. M.; Womelsdorff, J. E.
CS Sandia Lab., Albuquerque, NM, USA
SO Report (1984), SAND-82-1179; Order No. NUREG/CR-2812, 57 pp. Avail.: NTIS From: Gov. Rep. Announce. Index (U. S.) 1984, 84(10), 198
DT Report
LA English
CC 71-3 (Nuclear Technology)
AB The corrosion of galvanized steel, to produce H₂, will occur if sprays operate during a Loss-of-Coolant Accident in a LWR. The rates of H₂ generation, however, are variable and dependent on accident and post-accident conditions. A study was made designed to identify the important parameters (temp., pH, and H₃BO₃ [10043-35-3] concn.) in detg. the rates of H₂ generation from LWR containment building spray solns. The data were gathered over a wide range of temp., pH, and H₃BO₃ concn., and are used in a 2-level, 3-factor factorial expt. to det. the relative importance of the 3 parameters to the H₂ generation process. A statistical treatment of the data gives an indication of the relative importance of the parameters (temp., pH, H₃BO₃ concn.) and of their interactions. It attempts to fit the data to a relatively simple equation to model the interactions of the various parameters.
ST reactor accident corrosion steel hydrogen
IT Nuclear reactors, water-cooled (LWR, accidents, effect of temp. and pH and boric acid concn. on hydrogen prodn. from galvanized steel corrosion from spraying in)
IT 12597-69-2, reactions
RL: RCT (Reactant)
(corrosion of galvanized, following LWR accident, effect of temp. and

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pH and boric acid concn. on)
IT 10043-35-3, properties
RL: PRP (Properties)
(hydrogen prodn. as function of concn. of, in corrosion of galvanized
steel following LWR accident)

IT 1333-74-0P, preparation
RL: PREP (Preparation)
(prodn. of, in corrosion of stainless steel following LWR accident,
effect of temp. and pH and boric acid concn. on)

L58 ANSWER 33 OF 57 JICST-EPlus COPYRIGHT 2000 JST
AN 850257687 JICST-EPlus
TI A study on collecting method of ammonia in the atmosphere.
AU HIOKI TADASHI; ESAKA SHINOBU
CS Kyoto Prefect. Inst. of Hygienic and Environmental Sciences
SO Kyotofu Eisei Kogai Kenkyujo Nenpo (Annual Report of Kyoto Prefectural
Institute of Hygienic and Environmental Sciences), (1984) no. 29(1983),
pp. 153-156. Journal Code: Z0977A (Fig. 2, Tbl. 2, Ref. 5)
CODEN: KEKNDS; ISSN: 0389-5041
CY Japan
DT Report; Commentary
LA Japanese
STA New
CC SB03040I (614.71/.73:543.27)
CT air pollution; air pollutant; air quality test; sampling; odor material;
ammonia; concentration determination; concentration dependence;
boric acid; filter paper; flow rate; temperature; humidity
BT environmental pollution; pollution; pollutant; matter; test;
analysis(separation); analysis; sampling and winning; smell substance;
hydride; hydrogen compound; nitrogen compound; nitrogen group element
compound; measurement; dependence; boron oxyacid; oxyacid; oxygen
compound; oxygen group element compound; boron compound; 3B group element
compound; paper; filter material; material; meteorological element; degree

L58 ANSWER 34 OF 57 HCPLUS COPYRIGHT 2000 ACS
AN 1984:163968 HCPLUS
DN 100:163968
TI Method and device for controlling the pH of the cooling water of a
pressurized water nuclear reactor
IN Saurin, Pierre; Trottier, Jean Pierre; Nordmann, Francis
PA Framatome, Fr.
SO Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DT Patent
LA French
IC G05D021-02; G21C019-30
CC 71-4 (Nuclear Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 94884	A1	19831123	EP 1983-400968	19830511
	EP 94884	B1	19860820		
	R: BE, CH, DE, GB, IT, LI, SE				
	JP 58205893	A2	19831130	JP 1983-83456	19830512
PRAI	FR 1982-8218	19820512			
AB	The pH of the cooling water of a PWR is controlled by continuously measuring the concn. of H ₃ BO ₃ [10043-35-3] in the cooling water and 1 of the 2 following parameters: the pH at room temp. and the concn. of base used in the conditions (e.g. Li ₂ O necessary to obtain a pH at high temp. equal to a predetd. value. The amt. of conditioning base one needs to add or remove is detd. and an injection or corresponding sampling is effected in the reactor primary circuit. The characteristic chem. of the primary fluid is thus controlled to limit the radioactivity of the primary circuit.				

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ST cooling water PWR pH control; boric acid PWR cooling water
 IT Nuclear reactors, water-cooled
 (PWR, coolants and cooling systems, pH control of water in)
 IT 10043-35-3, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, continuous, pH control of PWR cooling water in relation to)
 IT 12057-24-8, uses and miscellaneous
 RL: USES (Uses)
 (in pH control of PWR cooling water)
 IT 7732-18-5, analysis
 RL: ANST (Analytical study)
 (pH detn. and control in).

 L58 ANSWER 35 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1984:114118 HCPLUS
 DN 100:114118
 TI Chemical concentration - flameless atomic absorption
 spectrometric determination of trace iron in high-purity
 boric acid
 AU Yu, Zhijian; Zhang, Zuhong; Liu, Shuping
 CS Tianjin Third Chem. Reagent Fact., Tianjin, Peop. Rep. China
 SO Huaxue Shiji (1983), 5(5), 315-19
 CODEN: HUSHDR
 DT Journal
 LA Chinese
 CC 79-6 (Inorganic Analytical Chemistry)
 AB Trace Fe (<0.1 ppm) in high-purity boric acid was detd. by flameless at.
 absorption spectrometry after enrichment by chem. means. Boric acid was
 reacted with MeOH in the presence of HCl (catalyst) to give highly
 volatile Me borate (b.p. 68.degree.) which was readily evapd. to leave an
 Fe-rich residue. The method had a lower detection limit of 0.02 ppm and a
 relative std. error of 15%. In a test boric acid sample (contg. added
 0.06 .mu.g Fe), Fe was detd. by flameless at. absorption spectrometry
 after chem. enrichment to be 0.059 .mu.g. The presence of .1toreq.200
 .mu.g B in the Fe-rich residue did not interfere with the detn. of 0.170
 .mu.g Fe.
 ST iron detn boric acid atomic absorption; boric acid analysis iron
 IT 7439-89-6, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in high-purity boric acid by flameless
 at. absorption spectrometry, preconcn. technique for)
 IT 67-56-1, uses and miscellaneous
 RL: USES (Uses)
 (in iron detn. in high-purity boric acid by flameless at. absorption
 spectrometry)
 IT 11113-50-1
 RL: ANST (Analytical study)
 (iron detn. in high-purity, preconcn. technique for flameless at.
 absorption spectrometric)

 L58 ANSWER 36 OF 57 COMPENDEX COPYRIGHT 2000 EI
 AN 1983(3):30123 COMPENDEX DN 830321553; *8381701
 TI MEASUREMENT OF OZONE CONCENTRATION.
 AU Thelamon, Claude (Lab de Rech et de Control du Caoutchouc, Montrouge, Fr)
 SO Polym Test v 3 n 2 1982 p 143-150
 CODEN: POTEDZ ISSN: 0142-9418
 PY 1982
 LA English
 AB The principal methods used to measure ozone
 concentration are reviewed and experimental comparisons made
 between chemical methods, with both phosphate and boric
 acid buffers, UV absorption, and electrochemical methods. The
 advantages and disadvantages of the methods are considered and
 recommendations are made for the adoption of a standard reference method

CC for rubber test methods.10 refs.
 CC 818 Rubber & Elastomers; 801 Chemical Analysis & Physical Chemistry; 802
 Chemical Apparatus & Plants; 804 Chemical Products; 912 Industrial
 Engineering & Management; 943 Mechanical & Miscellaneous Measuring
 Instruments
 CT *RUBBER TESTING:Research; OZONE:Measurements;
 CHEMICALS:Applications; ABSORPTION; ELECTROCHEMISTRY
 ST OZONE CONCENTRATION MEASUREMENTS

L58 ANSWER 37 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1984:110519 HCAPLUS
 DN 100:110519
 TI Trial operation of the NAR-B analyzers at a nuclear power plant.
 AU Shagov, S. V.; Gurkov, V. A.; Egorov, A. E.
 CS USSR
 SO Vopr. At. Nauki Tekh., [Ser.]: Radiats. Tekh. (1982), 2, 79-84
 CODEN: VANTDI
 DT Journal
 LA Russian
 CC 71-3 (Nuclear Technology)
 Section cross-reference(s): 79
 AB The exptl. use of radiation analyzers NAR-B was generalized. Results are
 given of the measurement of H₃BO₃ concn. in
 the primary circuit of the reactor at a min. control level using a
 colorimetric method and a n-absorption method.
 ST radiation analyzer reactor boric acid; neutron absorption boric acid detn;
 coolant reactor boric acid detn
 IT Nuclear reactors
 (coolants and cooling systems, boric acid
 concn. detn. in primary-circuit, neutron analyzer
 trial operation for)
 IT 7440-42-8, analysis 10043-35-3, analysis
 RL: ANST (Analytical study)
 (detn. of concn. of, in nuclear reactor power plant
 primary circuit coolant)
 IT 12586-31-1, chemical and physical effects
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (in boron concn. detn. in nuclear reactor power plant primary circuit
 coolant)

L58 ANSWER 38 OF 57 NTIS COPYRIGHT 2000 NTIS
 AN 1982(25):1233 NTIS Order Number: DE82902875
 TI Determination of Low-Thorium Content in Granites Using X-Ray Fluorescence.
 AU Shigematsu, H. M.; Sato, I. M.; Iyer, S. S.
 CS Instituto de Pesquisas Energeticas e Nucleares, Sao Paulo (Brazil).
 (074427000; 3272100)
 NR DE82902875; IPEN-Pub-11; CONF-8010269-4
 11 p. NTIS Prices: PC A02/MF A01
 Availability: U.S. Sales Only.
 Notes: 21. Brazilian congress of chemistry, Porto Alegre, Brazil, 21 Oct
 1980, Portions of document are illegible.
 PD Mar 1981
 LA Spanish CY Brazil
 OS GRA&I8225; ERA citation 07:044252
 AB An analytical method for the accurate determination of low concentrations
 of thorium in rocks using x-ray fluorescence technique was developed. A
 tungsten tube was utilized for the production of x-rays. The samples were
 prepared in the form of double layer pressed pellets using boric acid as a
 binding agent. The concentration of thorium was determined by measuring
 the intensity of the characteristics first order Th L alpha line. The
 calibration was carried out with USGS rock standards AGV-1, GSP-1 and G-2.
 Seven granite rock samples from Granite Mountains of Wyoming, USA,
 supplied by Dr. Stuckless, were also analyzed. The results obtained were
 compared with values obtained in other laboratories using different

analytical methods. The analyses show that the thorium is concentrated in accessory minerals and presented a non-uniform distribution, making sampling an important factor in the analysis of thorium. A discussion of the precision and accuracy of the method is presented.

CC 07D Physical chemistry
 08I Mining engineering
 99A Analytical chemistry
 48A Mineral industries
 CT *Thorium; *Granites; X-ray fluorescence analysis; Chemical analysis; Calibration standards; Comparative evaluations; Sampling; Accuracy; Reliability; Quantitative chemical analysis; Experimental data
 *Foreign technology
 UT ENERGY CL 400103; NTISDEP

L58 ANSWER 39 OF 57 HCAPLUS COPYRIGHT 2000 ACS

AN 1981:609104 HCAPLUS

DN 95:209104

TI Analyzing anions and treating radioactive liquid waste utilizing the same
 IN Horiuchi, Susumu; Hiraoka, Taiji; Saito, Toru

PA Hitachi, Ltd., Japan

SO Eur. Pat. Appl., 42 pp.

CODEN: EPXXDW

DT Patent

LA English

IC G01N031-04; G01N027-06; G21F009-04

CC 60-2 (Sewage and Wastes)

Section cross-reference(s): 79

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 36303	A1	19810923	EP 1981-301047	19810312
	EP 36303	B1	19860205		
	R: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	JP 56128497	A2	19811007	JP 1980-32535	19800313
	JP 56135154	A2	19811022	JP 1980-39203	19800326
	US 4507390	A	19850326	US 1981-243620	19810313

PRAI JP 1980-32535 19800313

JP 1980-39203 19800326

AB Anions of low degree of dissocn. and low elec. cond. in aq. soln. are detd. by reacting them with a polyhydric alc. and then detg. the H⁺ formed from the reaction. Thus, an aq. H₃BO₃ soln. contg. various anions and cations is charomatog. processed to give a cation-free H₃BO₃ soln., the elec. cond. is detd., a sorbitol soln. is added to form the complex and free H⁺, the elec. cond. is detd. a 2nd time, and the borate ion concn. detd. a 2nd time, and the borate ion concn. detd. by the elec. cond. difference in the above 2 detns. This procedure is used to adjust the H₃BO₃ concn. in a NaOH-contg. PWR radioactive waste soln. to give a NaOH/H₃BO₃ wt. ratio of 0.28-0.4 so that the soln. can be changed into a powder in a centrifuged thin-film drier for pelletization.

ST boric acid radioactive waste processing; borate detn complexation chromatog; anion detn complexation chromatog; elec cond anion detn complexation

IT Electric conductivity and conduction
 (of aq. soln. contg. boric acid-polyhydric alc. reaction product, in borate ion detn.)

IT Radioactive wastes

(liq., boric acid concn. detn.

in, for powdering and pelletization)

IT 10043-35-3, analysis 14100-65-3

RL: ANT (Analyte); ANST (Analytical study)

(detn. of, in radioactive liq., elec. cond. and polyhydric alc. complexation in)

IT 50-70-4DP, borate complexes 69-65-8DP, borate complexes 7440-42-8DP,
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complexes with mannitol and sorbitol
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in borate detn. in aq. soln.)
 IT 50-70-4, occurrence 69-65-8
 RL: OCCU (Occurrence)
 (in complexation of borate ion in radioactive liq. waste, for elec.
 cond. detn.)

L58 ANSWER 40 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1981:487864 HCAPLUS
 DN 95:87864
 TI Effect of destabilizing factors on the determination of
boric acid concentration
 AU Bovin, V. P.; Gurkov, V. A.; Zasadych, Yu. B.; Nikolaenko, O. K.;
 Ponomarev, E. G.; Chistyakov, B. G.; Shagov, S. V.
 CS USSR
 SO Vopr. At. Nauki Tekh., [Ser.]: Radiats. Tekh. (1980), 19, 148-52
 CODEN: VANTDI
 DT Journal
 LA Russian
 CC 71-5 (Nuclear Technology)
 Section cross-reference(s): 79
 AB For timely control of the concn. of H₃BO₃ in a WWER-type reactor
 coolant, a continuous automatic detn. of the H₃BO₃ content in the
 coolant is required. The effect was studied of destabilizing
 factors: coolant temp. and temp. of the surrounding media, n
 background, .gamma.-ray dose rate, thickness of the pipelines, and
 coolant d. on the operation of the B concn. meter NAR-B at nuclear
 power plant conditions.
 ST WWR boron concn meter coolant; reactor coolant boron
 concn detn
 IT Nuclear reactors
 (water-cooled, WWR, coolants and cooling systems,
 boric acid concn. detn. in,
 destabilizing factors effect on)
 IT 7440-42-8, analysis 10043-35-3, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in WWR coolant, destabilizing factors effect on)

L58 ANSWER 41 OF 57 HCAPLUS COPYRIGHT 2000 ACS
 AN 1981:487863 HCAPLUS
 DN 95:87863
 TI Boron concentration meter for monitoring water-moderated, water-cooled
 type nuclear power reactors
 AU Bovin, V. P.; Gurkov, V. A.; Nikolaenko, O. K.; Chistyakov, B. G.; Shagov,
 S. V.; Ponomarev, E. G.; Polyakov, Yu. A.
 CS USSR
 SO Vopr. At. Nauki Tekh., [Ser.]: Radiats. Tekh. (1980), 19, 141-8
 CODEN: VANTDI
 DT Journal
 LA Russian
 CC 71-5 (Nuclear Technology)
 Section cross-reference(s): 79
 AB The development of nuclear power engineering based on WWER-type reactors,
 into the coolant of which is introduced H₃BO₃ to
 compensate for excess reactivity, has required the development of methods
 for continuously measuring the B concn. The B concn.
 meter is based on the n-absorption method of anal. The assocd. app. is
 described. The NAR-B analyzer was able to detect a change in H₃BO₃ concn.
 from 7.56 g/kg to zero and from zero to 6 g/kg with an error of
 .ltoreq.4%.
 ST boron concn meter monitoring reactor; WWR boric acid concn monitoring
 IT Nuclear reactors
 (water-cooled, WWR, coolants and cooling systems, boron
 KATHLEEN FULLER EIC 1700 308-4290

concn. monitoring meter for)
 IT 7440-42-8, analysis 10043-35-3, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in WWR coolant, meter for)

L58 ANSWER 42 OF 57 COMPENDEX COPYRIGHT 2000 EI
 AN 1981(2):5518 COMPENDEX DN 810216420
 TI Instrument for Measuring the Concentration of
 Boric Acid in the Coolant of a Power Reactor.
 MIERNIK STEZENIA KWASU BOROWEGO W CHLODZIENIU REAKTORA ENERGETYCZNEGO.
 AU Lisieski, Waldeman
 SO Przegl Elektrotech v 56 n 3 Mar 1980 p 129-132
 CODEN: PZELAL ISSN: 0033-2097
 PY 1980
 LA Polish
 AB The principles of operation of a meter designed for the continuous
 measurement of boric acid
 concentration in the boron recovery installations from reactor
 cooling water are described. The range of measured
 concentrations is 45 g H₃BO₃/kg in three sub-ranges. The
 principle of meter operation is based on the method of neutron absorption
 by boron. The main technical and operational parameters and the results of
 measurements on an experimental boron recovery installation are given.
 Research work is outlined for extending the application of the meter. 11
 refs. In Polish.
 CC 621 Nuclear Reactors; 804 Chemical Products
 CT *NUCLEAR REACTORS, WATER COOLED:Measurements;
 ACIDS:Measurements
 ST BORIC ACID
 ET W; B*H*O; H₃BO₃; H cp; cp; B cp; O cp

L58 ANSWER 43 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1979:600933 HCPLUS
 DN 91:200933
 TI NAR-B neutron-absorption concentration meters
 AU Antonenko, A. M.; Gorbenko, V. M.
 CS Dnepropetr. Gos. Univ., Dnepropetrovsk, USSR
 SO Zavod. Lab. (1979), 45(9), 848-9
 CODEN: ZVDLAU; ISSN: 0044-1910
 DT Journal
 LA Russian
 CC 71-9 (Nuclear Technology)
 Section cross-reference(s): 79
 AB The title device was developed for the continuous automatic detn. in soln.
 of the concn. of a single element having a large absorption cross-section
 for slow n. One of the principal uses of this app. is in detg.
 the concn. of H₃BO₃ in the primary loop
 coolant of WWER-type reactor installations. The basis tech.
 characteristics of the analyzer are presented.
 ST neutron absorption concn meter; reactor coolant boric acid detn
 IT Nuclear reactors
 (water-cooled, WWR, coolants and cooling systems,
 boric acid detn. in, neutron-absorption
 concn. meters in relation to)
 IT 10043-35-3, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in nuclear reactor primary loop coolant, app. for)

L58 ANSWER 44 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1978:182040 HCPLUS
 DN 88:182040
 TI Determination of an isotopic concentration of boron in
 boric acid and boron oxide
 IN Kucheryaev, A. G.; Lebedev, V. A.

PA USSR
 SO U.S.S.R.
 From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1978, 55(5),
 147.
 CODEN: URXXAF
 DT Patent
 LA Russian
 IC G01N027-28
 CC 79-6 (Inorganic Analytical Chemistry)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	SU 591755	T	19780205	SU 1976-2397504	19760824
AB	The B isotopic concn. in boric acid and B oxide was detd. by measuring the amplitudes of the multiplet lines owing to heteronuclear spin-spin coupling in F-19 NMR. The anal. time was decreased and its cost was reduced by dissolving boric acid or boron oxide in HF and recording the F-10B-decoupled NMR spectra of BF4-. The isotopic concn. of 10B was detd. from the ratio of the singlet amplitude owing to the bond between 19F and 10B to the sum of the amplitudes of the singlet and quartet owing to the heteronuclear spin-spin coupling of 19F with 11B. Boric acid and boron oxide were dissolved in HF so that the F/B ratio was 3.5-4 and the concn. was 2M B.				
ST	boron isotope detn fluorine NMR; boric acid analysis boron isotope; oxide boron analysis boron isotope; hydrofluoric acid boron isotope detn				
IT	1303-86-2, analysis	11113-50-1			
	RL: ANST (Analytical study) (boron isotope detn. in, by F-19 NMR spectrometry)				
IT	7440-42-8D, isotopes, analysis	RL: ANT (Analyte); ANST (Analytical study) (detn. of, in boric acid and boron acid by fluorine-19 NMR)			
IT	14798-12-0, analysis	RL: ANT (Analyte); ANST (Analytical study) (detn. of, in boric acid and boron oxide, hydrofluoric acid in F-19 NMR spectrometric)			
IT	7664-39-3, uses and miscellaneous	RL: USES (Uses) (in detn. of boron isotopes by F-19 NMR spectrometry)			

L58 ANSWER 45 OF 57 WPIDS COPYRIGHT 2000 DERWENT INFORMATION LTD
 AN 1977-31260Y [18] WPIDS
 TI Automatic measurement of boron concentration - in
boric acid - contg. water used in primary
coolant of pressure water reactor by conductivity determination.
 DC E36 K05 S03
 PA (NIKK-N) NIKKISO CO LTD
 CYC 4
 PI DE 2645846 A 19770428 (197718)*
 CH 609778 A 19790315 (197916)
 GB 1556063 A 19791121 (197947)
 JP 52049092 A 19770419 (199129)
 PRAI JP 1975-124529 19751016
 IC G01N001-28; G01N027-06; G21C017-02
 AB DE 2645846 A UPAB: 19930901
 The appts. is provided with a temp. sensitive element for the determin. of the changes in temperature of the continuously flowing mixt.
 The temperature-sensitive element, which pref. has a positive temp. coefft. of resistance and may be a Cu, Pt, or Ni wire, is incorporated in a measuring circuit for measurements by changes in the temperature of the continuously flowing water sample.
 Method provides automatic correction for temp. changes during the measurement of boron concn.
 FS CPI EPI

FA AB
 MC CPI: E31-Q; K05-B03; K05-B05; K05-B06
 L58 ANSWER 46 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1977:589547 HCPLUS
 DN 87:189547
 TI Analysis of alcohol solutions of boric acid
 AU Morachevskaya, M. D.; Danevich, V. I.; Shigina, L. I.
 CS Leningr. Khim.-Farm. Inst., Leningrad, USSR
 SO Farmatsiya (Moscow) (1977), 26(5), 83-4
 CODEN: FRMTAL
 DT Journal
 LA Russian
 CC 64-4 (Pharmaceutical Analysis)
 AB Optical d. factor anal. was shown to be an accurate method for detg. the concn. of H₃BO₃ in solns. contg. H₃BO₃, EtOH, and water. The precision of this method was .+-0.02% when the concn. of EtOH-water was 60-80%.
 ST boric acid detn alc soln
 IT 10043-35-3, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in alc. solns., by optical d. factor anal.)
 L58 ANSWER 47 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1977:164809 HCPLUS
 DN 86:164809
 TI Method and a device for determining the boric acid concentration in the coolant of light-water nuclear power reactors
 AU Trifonov, A.; Stefanov, G.; Mikhailov, M.; Khristov, V.; Guteva, E.
 CS Inst. Yad. Issled. Yad. Energ., Sofia, Bulg.
 SO Yad. Energ. (1976), 3, 42-8
 CODEN: YAENDM
 DT Journal
 LA Bulgarian
 CC 79-6 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 71
 AB A device for detg. B concn. in H₂O by neutron absorption consisted of a Pu-Be neutron source (5 .times. 10⁶ neutrons/s) and the SNM-17 counter immersed in the H₂O; the counting rate under const. geometry conditions decreased from 50,000 to 13,000 cps when the B concn. was increased from 0 to 20 g/L. The errors in the detn. of 2-10 and 10-20 g H₃BO₃/dm³ in the primary circuit coolant of a nuclear power reactor were .ltoreq.1.5 and 4%, resp.
 ST boron detn water coolant; boric acid detn water coolant ; water coolant analysis boron; nuclear reactor coolant analysis boron; neutron absorption boron detn water
 IT Nuclear reactors
 (coolants, boron detn. in water, by neutron absorption)
 IT 7732-18-5, analysis
 RL: AMX (Analytical matrix); ANST (Analytical study)
 (boron detn. in, in coolant circuit of nuclear power reactor, by neutron absorption)
 IT 10043-35-3, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in water coolant of nuclear power reactor, by absorption)
 IT 7440-42-8, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in water coolant of nuclear power reactor, by absorption)
 L58 ANSWER 48 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1977:574475 HCPLUS

DN 87:174475
 TI Equipment for continuous measurement of boric acid concentration of a pressurized water reactor
 AU Csom, G.; Desi, S.; Elo, S.; Szepessy, B.; Szucs, I.; Spitko, E.
 CS Tech. Univ. Budapest, Budapest, Hung.
 SO Int. Fachmesse Kerntech. Ind. (1976), Meeting Date 1975, Issue Kolloq. Cl, Paper C1/6, 10 pp. Publisher: Swiss Ind. Fair, Basel, Switz.
 CODEN: 36RLAX
 DT Conference
 LA German
 CC 71-5 (Nuclear Technology)
 Section cross-reference(s): 79
 AB A method and app. are described for measuring the B concn. of water in a PWR by using n absorption. The tests were conducted with a BF₃ counting tube and a Pu-Be n source. Many geometrical variants were tested to establish the optimal measuring arrangement, but they can all be classified further as 1 of 2 types: transmission or reflection. The construction of the optimal app. is described in detail.
 ST boric acid pressurized water reactor; detn boron reactor neutron
 IT Nuclear reactors
 (water-cooled, PWR, boric acid concn.
 continuous measurement in, app. for)
 IT 7440-42-8, analysis 10043-35-3, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in water of pressurized-water nuclear reactors, by neutron absorption)
 IT 12586-31-1, chemical and physical effects
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (in boric acid concn. continuous
 measurement in water of pressurized-water reactor)

 L58 ANSWER 49 OF 57 COMPENDEX COPYRIGHT 2000 EI
 AN 1976(4):632 COMPENDEX DN 760425657
 TI NEUTRON-ABSORPTION ANALYZER OF BORON IN THE COOLANT OF THE PRIMARY CIRCUIT OF WATER-COOLED WATER-MODERATED POWER REACTORS.
 AU Bovin, V.P.; Chulkin, V.L.; Shagov, S.V.
 SO Sov At Energy v 38 n 5 May 1975 p 363-366
 CODEN: SATEAZ
 PY 1975
 LA English
 AB A neutron-absorption analyzer designed for measuring boric acid concentrations in the coolant of the primary circuit of water-cooled water moderated power reactors up to 50 g/kg in three ranges 0-10, 0-20 and 0-50 g/kg is described. The results are applied to a potentiometer recorder and to a control and computing circuit. The accuracy is better than 4% of full range for time interval meter time constant tau=50 sec. The results of analyzer calibration are presented. 6 refs.
 CC 621 Nuclear Reactors; 932 High Energy, Nuclear & Plasma Physics
 CT *NEUTRONS:Absorption; NUCLEAR REACTORS:Cooling

 L58 ANSWER 50 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1976:11760 HCPLUS
 DN 84:11760
 TI Apparatus for measuring boric acid concentration
 AU Bovin, V. P.; Ivanov, O. V.; Komissarov, V. A.; Shagov, S. V.
 CS USSR
 SO [Tr.], VNII Radiats. Tekhn. (1975), (11), 263-8
 From: Ref. Zh., Khim. 1975, Abstr. No. 13D5
 DT Journal
 LA Russian
 CC 79-2 (Inorganic Analytical Chemistry)
 AB Title only translated.

nuclear reactor moderator analysis borate; borate detn nuclear reactor moderator
 IT Acids, analysis
 Bases, analysis
 RL: ANST (Analytical study)
 (detn. of weak, in liqs. at boiling point, app. for, conductometric)
 IT Electric conductivity and conduction
 (detn. of, app. for, for detn. of weak acids and bases in liqs. at
 boiling point)
 IT Nuclear reactors
 (moderators, boric acid detn. in)
 IT 7732-18-5, analysis
 RL: ANST (Analytical study)
 (buffer capacity detn. in boiling, in power plant steam generators,
 app. for conductometric)
 IT 10043-35-3, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in moderators for nuclear reactors, app. for conductometric)

L58 ANSWER 53 OF 57 HCPLUS COPYRIGHT 2000 ACS

AN 1975:144740 HCPLUS

DN 82:144740

TI Determination of the boric acid
 concentration in the primary coolant of pressurized
 water reactors

AU Panovsky, W.; Felsberg, H.; Oertel, K.

CS Inst. Energet., Leipzig, E. Ger.

SO Acta Hydrochim. Hydrobiol. (1974), 2(1), 83-8

CODEN: AHCBAU

DT Journal

LA German

CC 61-2 (Water)

Section cross-reference(s): 79

AB The method is based on the detn. of complexes of free H₃BO₃ with 1,2- or
 cis 1,3-diols by using cond. measurements or potentiometric titrn. The
 instruments used are described and results were compared to the usual
 anal. titrimetric method. Satisfactory accuracy was obtained in the range
 50 mg-6 g H₃BO₃/l.

ST boric acid detn water; diol boric acid detn water

IT 7732-18-5, analysis

RL: ANST (Analytical study)

(boric acid detn. in)

IT 10043-35-3, analysis

RL: ANT (Analyte); ANST (Analytical study)

(detn. of, in water)

L58 ANSWER 54 OF 57 HCPLUS COPYRIGHT 2000 ACS

AN 1975:421837 HCPLUS

DN 83:21837

TI Measurement of boric acid
 concentration in electrolyte solutions for molding aluminum foils
 by indirect parameters

AU Frolov, V. N.; Klimentov, N. I.

CS USSR

SO Sb. tr. Voronezh. politekhn. in-ta (1973), (Vyp. 4), 243-6

From: Ref. Zh., Khim. 1974, Abstr. No. 13L311

DT Journal

LA Russian

CC 79-6 (Inorganic Analytical Chemistry)

AB Title only translated.

ST boric acid detn electrolyte; electrolyte analysis boric acid

IT 10043-35-3, analysis

RL: ANT (Analyte); ANST (Analytical study)

(detn. of, in electrolyte solns. for molding aluminum foils)

KATHLEEN FULLER EIC 1700 308-4290

IT 7429-90-5, uses and miscellaneous
 RL: USES (Uses)
 (molding foils of, boric acid detn. in electrolyte solns. for)

L58 ANSWER 55 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1970:461796 HCPLUS
 DN 73:61796
 TI Automatic boron concentration monitoring in pressurized water reactors
 AU Steger, H.
 CS Ger.
 SO Kerntechnik (1970), 12(4), 155-8
 CODEN: KERTAA
 DT Journal
 LA German/English
 CC 76 (Nuclear Technology)
 AB In pressurized water reactors, the admixt. of boric acid to the coolant presents appreciable advantages as compared with the power output control by means of control rods only. By varying the boric acid concn. in the primary circuit diurnal power variations can be achieved; in addn. n flux changes owing to increasing burnup or reloading can be compensated. This requires a continuous measurement of the boric acid concn. with high precision, long term reproducibility, and over a wide concn. range. To achieve this goal, an automatic titrator is proposed which solves the main problem of accurate and reproducible metering of small vols. of liq. by using a so-called minus-delta-p-pump. The detn. of the boric acid itself is performed by potentiometric titrn. with NaOH in the presence of mannite. The titration of 6 primary water samples/hr ensures a sufficiently accurate monitoring of the B concn.
 ST boron monitoring reactors controls; monitoring boron reactors controls; reactors controls boron monitoring; controls reactors boron monitoring
 IT Titrators
 (automatic, for monitoring boron concns. in nuclear reactor coolants)
 IT Nuclear reactors
 (coolants, boron concn. monitoring in pressurized-water)
 IT 10043-35-3, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in nuclear reactor pressurized-water coolants)
 IT 7440-42-8, uses and miscellaneous
 RL: USES (Uses)
 (nuclear reactor coolants contg. poison of, monitoring of concn. in)

L58 ANSWER 56 OF 57 HCPLUS COPYRIGHT 2000 ACS
 AN 1969:46576 HCPLUS
 DN 70:46576
 TI Temperature-jump study of the rate and mechanism of the boric acid-tartaric acid complexation
 AU Kustin, Kenneth; Pizer, Richard
 CS Brandeis Univ., Waltham, Mass., USA
 SO J. Amer. Chem. Soc. (1969), 91(2), 317-22
 CODEN: JACSAT
 DT Journal
 LA English
 CC 22 (Physical Organic Chemistry)
 AB Temp.-jump studies of the reactions of tartaric acid and bitartrate and tartrate anions with boric acid at 3 different H⁺ concns. allowed the detn. of the rate consts. for the reactions of tartaric acid and tartrate anion. The complexation rate const. for tartaric acid is 475 M⁻¹ sec⁻¹, which is considerably larger than the rate const. for tartrate anion (215 M⁻¹ sec⁻¹). Only a composite rate const. could be detd. for the ambident bitartrate anion (430 M⁻¹ sec⁻¹), which cannot be exptl. sepd. into rate consts. for the individual

reactions. No catalytic effect of acid on the rates of the individual reactions was noted within the limits of the expts. A concerted mechanism is proposed for the complex formation. The sequence includes attack of a nucleophilic alcoholic O on the electron-deficient B with concurrent release of water (in the tartaric acid reaction) or hydroxyl (in the bitartrate reaction). The leaving of water is assisted in the former case by the acidic carboxyl proton.

ST temp jump borate tartrate; borate tartrate temp jump; tartrate borate temp jump; complexation borate tartrate

IT Kinetics, reaction
(of boric acid with tartaric acid)

IT 526-83-0, reactions
RL: RCT (Reactant)
(with boric acid, kinetics of)

IT 10043-35-3, reactions
RL: RCT (Reactant)
(with tartaric acid, kinetics of)

L58 ANSWER 57 OF 57 HCAPLUS COPYRIGHT 2000 ACS

AN 1968:83431 HCAPLUS

DN 68:83431

TI Measuring device for the control of boric acid concentration in reactor facilities

AU Faehrmann, Karl; Jaepel, F.

CS Zentralinst. Kernforsch., Rossendorf-Dresden, Ger.

SO Kernenergie (1967), 10(11), 337-40

CODEN: KERNAQ

DT Journal

LA German

CC 76 (Nuclear Technology)

AB The device for which the mech. structure, electronic detection app., and method of operation are described can be used to det.
H₃BO₃ concns. from 0 to 10 g. B./l. with an accuracy of

.ltoreq.5% at .ltoreq.120.degree., pressures .ltoreq.120 atm., and
.gamma.-background .ltoreq.120 r./hr.

ST DETECTION B REACTORS; REACTORS BORIC ACID CONTROL; CONTROL BORIC ACID REACTORS; BORON DETECTION REACTORS; BORIC ACID CONTROL REACTORS

IT Nuclear reactors
(boric acid detn. and control in, app. for)

IT 10043-35-3, analysis

RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in nuclear reactor, app. for)



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